

# The 2002 Kentucky Youth Tobacco Survey

A statewide survey on the rate of tobacco use among Kentucky's youth

*Promoting Health  
Through Education*



# Kentucky Youth Tobacco Survey 2002

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# Executive Summary of the 2002 Kentucky Youth Tobacco Survey

The 2002 Kentucky Youth Tobacco Survey (KYTS) was conducted by the Kentucky Department for Public Health (KDPH) from March to June 2002. The survey is designed to gather information concerning prevalence of tobacco use among young people, secondhand smoke exposure, cessation of tobacco use, minors' access to tobacco products, tobacco use in schools, tobacco-related attitudes of young people and the influence of peers and family members in using tobacco products. The full 2002 KYTS shows results from both the 2000 and 2002 KYTS. This full report may be found on the Internet at: <http://chs.ky.gov/publichealth/tobacco.htm>. The comparison to the previous survey is presented to reflect what may be the beginnings of change in how Kentucky youth use and view tobacco products. It is important to note that even though many of the numbers have changed from the previous survey, many of these changes may not be considered statistically significant. However, there are some significant changes, and some areas where there are promising declines in use or behavior, which do not yet reach statistical significance but suggest the beginning of true change.

## THE 2002 KENTUCKY YOUTH TOBACCO SURVEY REVEALED THE FOLLOWING:

### *Current tobacco use—defined by the CDC as using a tobacco product on one or more days in the 30 days prior to the survey.*

- Thirty-four percent of high school students and 15% middle school students are current smokers. While not statistically significant changes, these numbers are down from 2000 when 37% of high school and 22% of middle school students were current smokers.
- The latest national data shows that 28% of high school and 11% of middle school students were currently smoking in 2000. This reveals that current high school and middle school smoking rates in Kentucky were higher than average during this year.
- There is a significant drop in current smoking for seventh graders—from 28% in 2000 to 17% in 2002, and for white middle school students from 22% in 2000 to 14% in 2002.
- Sixteen percent of African American high school students currently use cigarettes, compared to 36% of white students.
- The greatest increase in current smoking rates is seen between sixth and seventh grades, with almost one in four students smoking by the time they reach eighth grade. From grades 9 to 12, current smoking rates jump from 27% to 42%.
- Current use of spit/smokeless tobacco is one in four among high school boys and one in five among middle school boys.

### *Frequent Cigarette Use—defined by the CDC as smoking cigarettes on 20 or more of the 30 days prior to the survey.*

- Twenty percent of high school students and four percent of middle school students report frequent cigarette use.
- Approximately one in four 11<sup>th</sup> and 12<sup>th</sup> graders are frequent smokers.
- Frequent cigarette smoking is well established by the ninth grade.

### *Lifetime Tobacco Use—defined by the CDC as having ever tried any tobacco product.*

- Lifetime cigarette use may be beginning to decline – overall, 69% of high school students and 44% of middle school students have smoked cigarettes at some time, down from 74% among high school students and 50% among middle school students two years earlier.
- Lifetime cigar use for high school students declined significantly from 54% in 2000 to 48% currently.
- Lifetime use of smokeless or spit tobacco is statistically unchanged overall, but may in fact be increasing among 11<sup>th</sup> and 12<sup>th</sup> grade students. One in two high school boys and one in three middle school boys have tried smokeless tobacco.

***Tobacco Dependence:*** Having smoked 100 or more cigarettes or needing a cigarette everyday are considered strong indicators that an individual is becoming an established tobacco smoker. The earlier a young person begins smoking, the more likely they will become dependent on tobacco.

- Fifteen percent of all high school students smoked their first cigarette before age 11. Males are more likely to have smoked before age 11 than females.
- Thirty-nine percent of high school students and 18% of middle school students have smoked 100 or more cigarettes at the time of the survey.
- Nearly half of high school smokers say they need a cigarette every day.
- One in three middle school smokers need a cigarette every day. Eleven percent of sixth graders need a cigarette daily, while 35% of seventh graders need one every day.

### ***Tobacco Cessation***

- Despite the fact that 75% of current smokers believe that they could quit smoking if they wanted to, 49% of high school smokers and 53% of middle school smokers were unsuccessful in their attempts to quit smoking.
- Significantly FEWER high school students attempted to quit smoking in 2002 (49% of current smokers) compared to 2000 (60% of current smokers).

***Access to Tobacco Products:*** In Kentucky, it is against the law to sell tobacco products to minors or for minors to purchase, possess, or use tobacco products. Compliance checks conducted by the Kentucky Alcohol Beverage Control Agency indicate that 87% of Kentucky tobacco retailers comply with youth tobacco sales laws.

- Twenty percent of high school students and 7% of middle schools students purchase tobacco from retail outlets.
- Sixty-two percent of high school students and 75% of middle school students who made retail tobacco purchases were not asked to show proof of age.
- Forty-nine percent of high school students and 31% of middle school students were denied tobacco purchases due to their age at some point during the year.
- Twenty-four percent of high school students obtain cigarettes by giving money to an older person to purchase them.
- Twenty-seven percent of middle school students get cigarettes by borrowing/bumming them from someone else.
- An additional 10% of high school smokers and 13% of middle school smokers were given cigarettes by an older person.

***Secondhand Smoke (SHS):*** Children and teens are very vulnerable to harm from SHS, which occurs when nonsmokers are in the same area where others are smoking. SHS causes heart disease and lung cancer and is associated with asthma, bronchitis, pneumonia, and middle ear infections.

- Forty-five percent of high school nonsmokers report exposure to SHS while riding in a car, and 74% are exposed while in a room with a smoker. Fifty percent of middle school nonsmokers are exposed to SHS in a car, and 63% are exposed while in a room with a smoker.
- As can be expected, the rate of exposure to SHS for smokers is higher with 88% of high school smokers being exposed in a car, and 96% in a room with another smoker. Eighty-six percent of middle school smokers are exposed in a car, while 90% are exposed in a room with another smoker.

### ***Social Influences Impacting Tobacco Use***

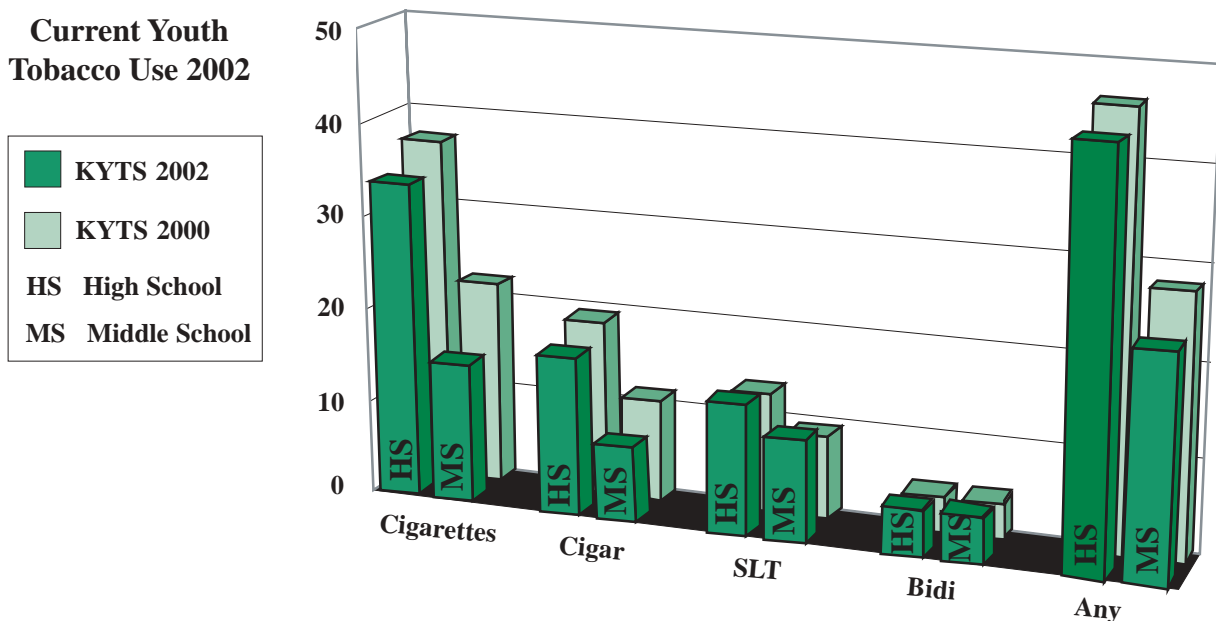
- Sixty-one percent of high school smokers and 76% of middle school smokers live with a person who smokes.
- Ninety-one percent of high school smokers have at least one friend who smokes, while 44% of nonsmokers have one or more friends who smoke.
- Eighty-six percent of middle school smokers have at least one friend who smokes, while 22% of nonsmokers in middle school have one or more friends that smoke.

The pattern of increased smoking in each grade shown in the 2002 KYTS has important implications for successful youth smoking prevention efforts. Middle school years are considered an important target for providing research-based tobacco prevention curricula. The data from the 2002 KYTS suggests that efforts to target youth in grades six through eight are beginning to have an impact as there has been a significant decrease in current smoking in seventh graders from 2000 to 2002. These survey results also reinforce the need for continuing these efforts in middle and high schools to ensure Kentucky's on-going progress toward the goal of reducing the number of youth who smoke. The number of students who were unsuccessful in their attempts to quit smoking demonstrates the necessity for cessation programs tailored to meet the needs of this demographic. This type of intervention should take place in both the school and community setting.

The Centers for Disease Control and Prevention report that at least 43 of the more than 4,000 identified chemical compounds of tobacco smoke are known to cause cancer in humans and animals. This critical danger of SHS emphasizes the need for further clean indoor air procedures that reduce secondhand smoke. Young people are strongly influenced by the examples they see in their social environment of tobacco use from their peers, family, and other adult role models such as teachers and coaches. Having strong tobacco-free policies in public places, which help to destabilize social acceptance of smoking within communities, are considered to be important components of a youth prevention program. Further interventions that focus positive role modeling among older high school students is also important in reducing tobacco dependence among established youth smokers.

To reduce youth initiation to tobacco products, the Task Force on Community Preventive Services (TFCPS) recommends increasing the unit price for tobacco products, particularly through raising state and federal excise taxes, and developing extensive and extended mass media campaigns particularly when they are the centerpiece along with other strategies.<sup>1</sup> Other strategies might include reducing youth access to tobacco products and school tobacco education programs.

#### Current Youth Tobacco Use 2002



This chart offers a quick reference to show that youth tobacco use rates are slightly lower than the previous survey. Current cigarette use among high school students was 34% in 2002, down three percentage points from 37% in 2000. Middle school current use of cigarettes dropped seven percentage points, from 22% to 15%. Current cigar use was reduced by two percentage points for high school students and three percentage points among middle school students. However, the use of smokeless tobacco (SLT) increased one percentage point among high school students and two percentage points among middle school students. Bidi use has remained constant through both surveys. The overall use of all tobacco products has decreased two percentage points, to 44%, among high school students and four percentage points, to 24%, among middle school students.

1. Martin P. Wasserman, MD, JD, "Guide to Community Prevention Services State and Local opportunities for Tobacco Use Reduction," *American Journal of Preventive Medicine*, February 2001, 8-9.

## Introduction

The 2002 Kentucky Youth Tobacco Survey (KYTS) was conducted by the Kentucky Department for Public Health (KDPH) from March to June 2002. Technical assistance was provided by the Centers for Disease Control and Prevention (CDC) Office on Smoking and Health (OSH). The survey, a 75 item school based questionnaire, was administered to 1,535 sixth, seventh and eighth graders at 44 randomly selected public middle schools and 1,530 9th-12th graders from 43 randomly selected public high schools. The survey is designed to gather information concerning:



- Prevalence of tobacco use among young people including cigarettes, smokeless tobacco, cigars, and bidis and kreteks.
- Secondhand smoke exposure.
- Cessation of tobacco use.
- The role of the media and advertising in youth tobacco use.
- Minor's access to tobacco products.
- Tobacco use in schools.
- Tobacco-related attitudes of young people.
- The influence of peers and family members to use tobacco products.

## Kentucky's Tobacco Use Prevention & Cessation Program

The Department for Public Health received funding from the (CDC) in 1993 to begin building a statewide Tobacco Use Prevention and Cessation Program. Between 1993 and 1999 funding expanded from \$70,000 (supporting one full-time coordinator and the development of a state coalition and plan for tobacco control), to \$1,000,000, funding four full-time positions and providing funding for local tobacco program coordinators in 11 local health departments.

This funding also supports contracts with the Department for Mental Health and Mental Retardation Services, Division of Substance Abuse, to assist them in more fully incorporating tobacco education in their substance abuse efforts, and a contract with the University of Kentucky College of Nursing for technical assistance, training and evaluation.

Following the Master Settlement Agreement (MSA) between 46 State Attorneys General and the five major tobacco companies, Governor Paul E. Patton requested the legislature to appropriate \$5.5 million of the funds for the Tobacco Use Prevention and Cessation Program for the 2000-2002 biennium. These funds made it possible to extend the tobacco education and cessation program in to each of the state's 56 Health Service Districts.



Using this combination of CDC and MSA funding, Kentucky's initiative is working to develop and implement a sustained, comprehensive tobacco control program aimed at decreasing disability, death and disease caused by tobacco use. The program addresses the four fundamental CDC goals:

- Prevent youth initiation of smoking.
- Help those who wish to quit smoking.
- Eliminate exposure to second hand smoke.
- Eliminate disparities among populations disproportionately affected by tobacco use.

Funding is provided to each local health service district or local health department in the Commonwealth to enable them to support at least one local tobacco control coordinator, develop local partnerships and coalitions in their communities and develop a comprehensive local action plan of education and cessation addressing the four CDC goals.

## Goals for Reducing the Use of Tobacco Products by Youth and Exposure to Secondhand Smoke

Specific objectives related to youth tobacco use prevention and cessation are contained in the Healthy Kentuckians 2010 Prevention Initiative. Healthy Kentuckians 2010 is a health initiative reflecting Kentucky's commitment to the national prevention project "Healthy People 2010" and includes specific objectives to be monitored over the next decade, the data sources to be used for measuring change and strategies to be used to achieve change. The Youth Behavioral Risk Survey (YBRS) conducted in odd number years, and the Kentucky Youth Tobacco Survey (KYTS) conducted in even numbered years, are the major data sources available to monitor progress toward meeting these goals.

Healthy Kentuckians 2010 provides direction for individuals to change behaviors and for organizations, communities and schools to support good health promotion policies. The thirteen objectives related to reducing youth tobacco use and exposure to secondhand smoke are listed on page 30 of this report.

## Understanding the Survey Results

This report shows results from both the 2000 and 2002 Kentucky Youth Tobacco Survey (KYTS). Both data sets are being presented here to show the data in comparison to the previous survey to show how behaviors **may** be beginning to change. It is very important to understand that even though almost every chart shows a difference in percentage between the results of the 2000 survey and the 2002 survey – **most of these differences are not statistically significant.**

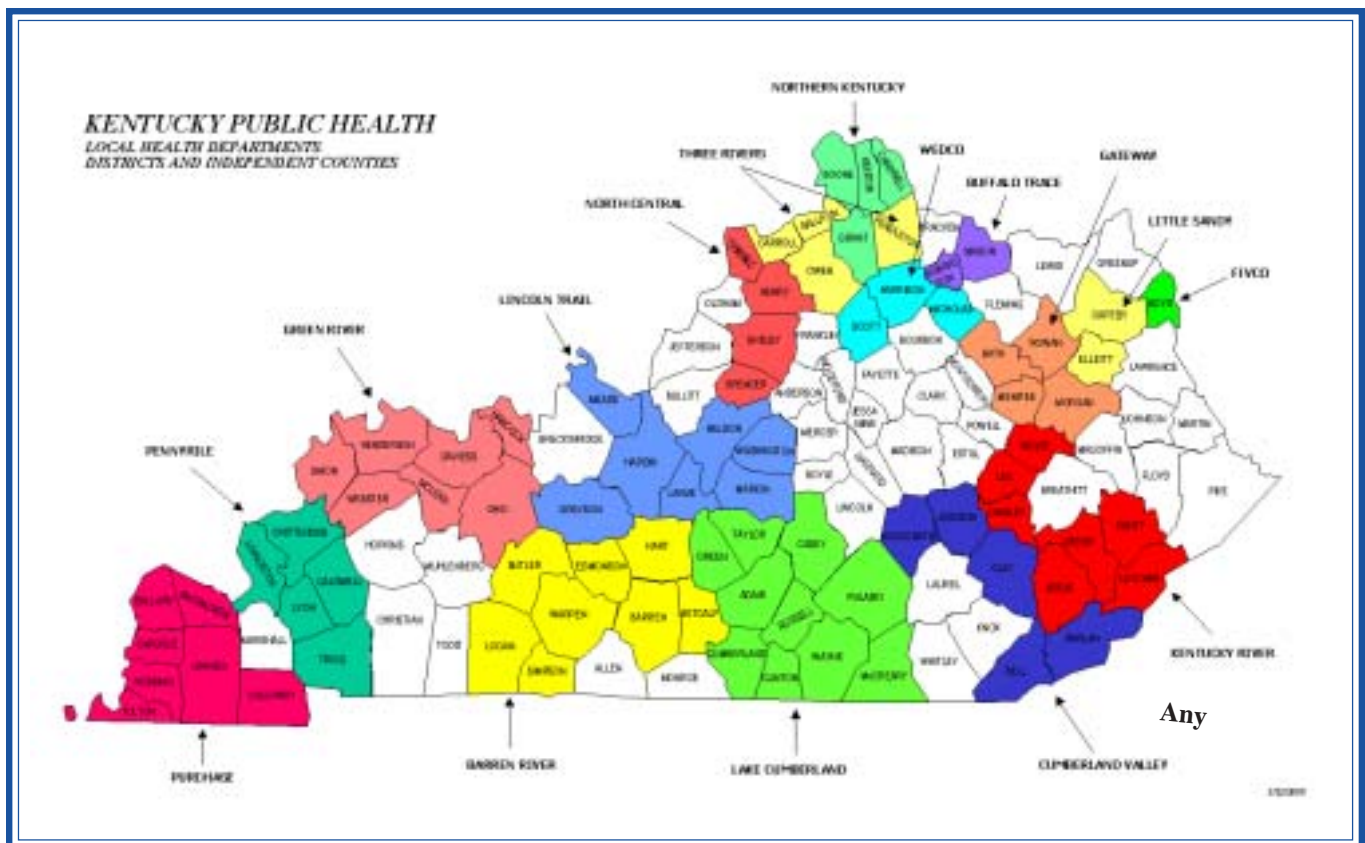
Statistical significance is of vital importance to data analysis as this is how researchers and program planners determine if a difference between groups, or difference from one year to another, is due to chance (not statistically significant) or reflects a true change in the behavior, attitude or result being measured. Whether comparing males and females or high school students in the 2000 survey and the 2002 survey, a confidence interval is most commonly used to determine if observed differences are due to chance, or are statistically significant – real changes in the behavior being measured. Most readers of this report are familiar with hearing the results of political polls being reported with a margin of error - one component of a confidence interval. For



example, a poll may show that 32% of voters support candidate X, with a margin of error of +/- 4%. This means that the “true” percentage of people who support candidate X ranges between 36% and 28%.

In the charts shown in the body of the report, instances of statistically significant changes from the previous study to the next or between groups will be indicated by the use of a **red asterisk (\*)** on the charts. In most instances the reader will see many differences that appear to be fairly large but which are not statistically significant. This is due in part to the type of sample design used by CDC for this survey, which produces slightly larger margins of error than might be anticipated. This in turn requires fairly substantial changes (often in the neighborhood of 8%) in order to attain statistical significance. While many of these differences are strongly suggestive of a downward trend in tobacco use, caution should be used in the interpretation of the data. This report indicates many reasons to be very optimistic about decreasing youth tobacco use in Kentucky – but confirmation that these changes are not random occurrences will best be confirmed by the results of surveys to be completed over the next two years.

## Local Health Departments Districts & Independent Counties

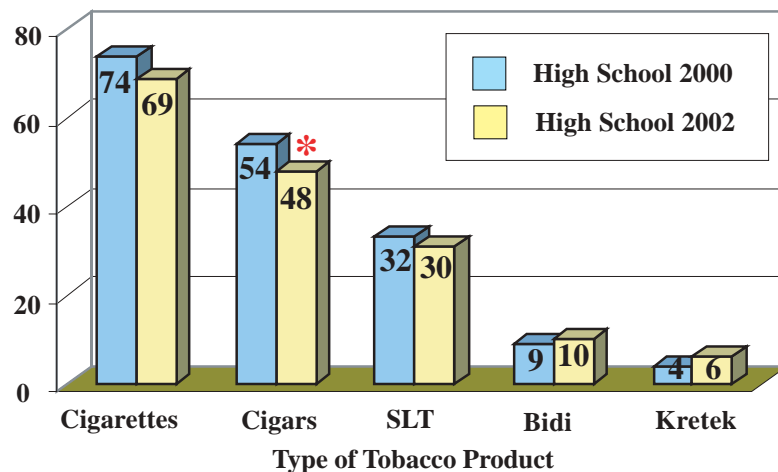


# Lifetime Use

CDC defines lifetime use of tobacco as having ever tried any tobacco product. This includes one or two puffs of a cigarette, cigar, bidi or kretek, or having ever tried spit tobacco. Every day, more than 5,000 American youth under age 18 try their first cigarette. Half of these young people become daily smokers after their initiation to tobacco. This statistic is a clear indicator of the need to educate our youth in the early school years about the health risks of tobacco use. Programs and policies that impact the onset of tobacco use during the school years are a crucial part of a comprehensive tobacco prevention program.

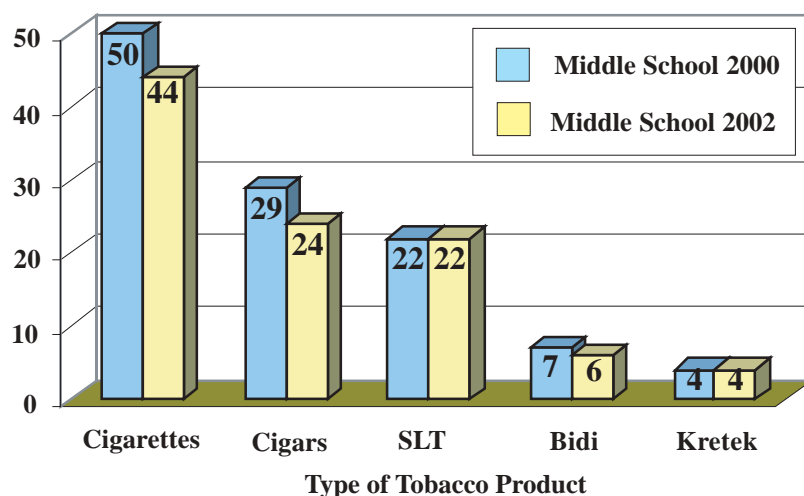
The results of the 2002 Kentucky Youth Tobacco Survey (KYTS) suggests a decline in the percentage of Kentucky high school students who have ever tried cigarettes and a significant decline in cigar smoking. As reflected in Chart 1 below, lifetime cigarette use among high school students was 74% in 2000 compared to 69% in 2002. Lifetime cigar use declined from 54% in 2000 to 48% in 2002. Use of kretek's (clove cigarettes) increased slightly while spit tobacco and bidis, remained relatively unchanged from the 2000 Kentucky Youth Tobacco Survey.

**Chart 1**  
**High School Students Lifetime**  
**Use of Tobacco Products**  
Change from 2000–2002



This same pattern suggesting decreased tobacco use is also evident for Kentucky's middle school students as shown in Chart 2. In 2000, 50% of middle school students had tried cigarettes compared to 44% in 2002. Lifetime cigar use was reported at 29% in 2000 and was statistically unchanged at 24% in 2002. No significant change is indicated in the use of spit tobacco, bidis, or kreteks.

**Chart 2**  
**Middle School Students Lifetime**  
**Use of Tobacco Products**  
Change from 2000–2002



## Current Use

CDC defines current use of tobacco as smoking cigarettes, cigars, bidi's or kretek's on one or more days in the 30 days before the survey, or using spit tobacco at least once in the 30 days prior to the survey. Chart 3 shows the percentage of high school students using specific types of tobacco in 2000 and 2002. Cigarette use is statistically unchanged among Kentucky's high school students. Thirty seven percent of high school students reported use in 2000 while 34% reported cigarette use in 2002. Use of cigars, smokeless or spit tobacco, bidis or kreteks are statistically unchanged from the 2000 survey.

**Chart 3**  
**High School Students Current**  
**Use of Specific Tobacco**  
**Products**  
Change from 2000–2002

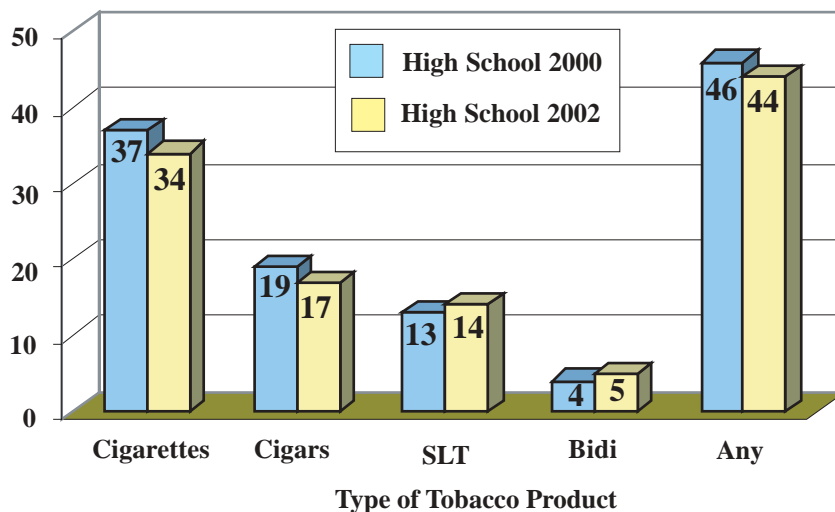
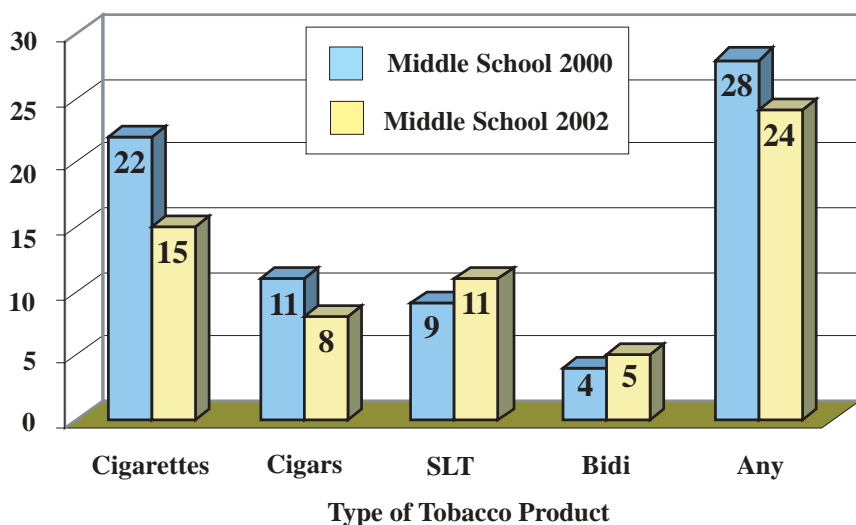


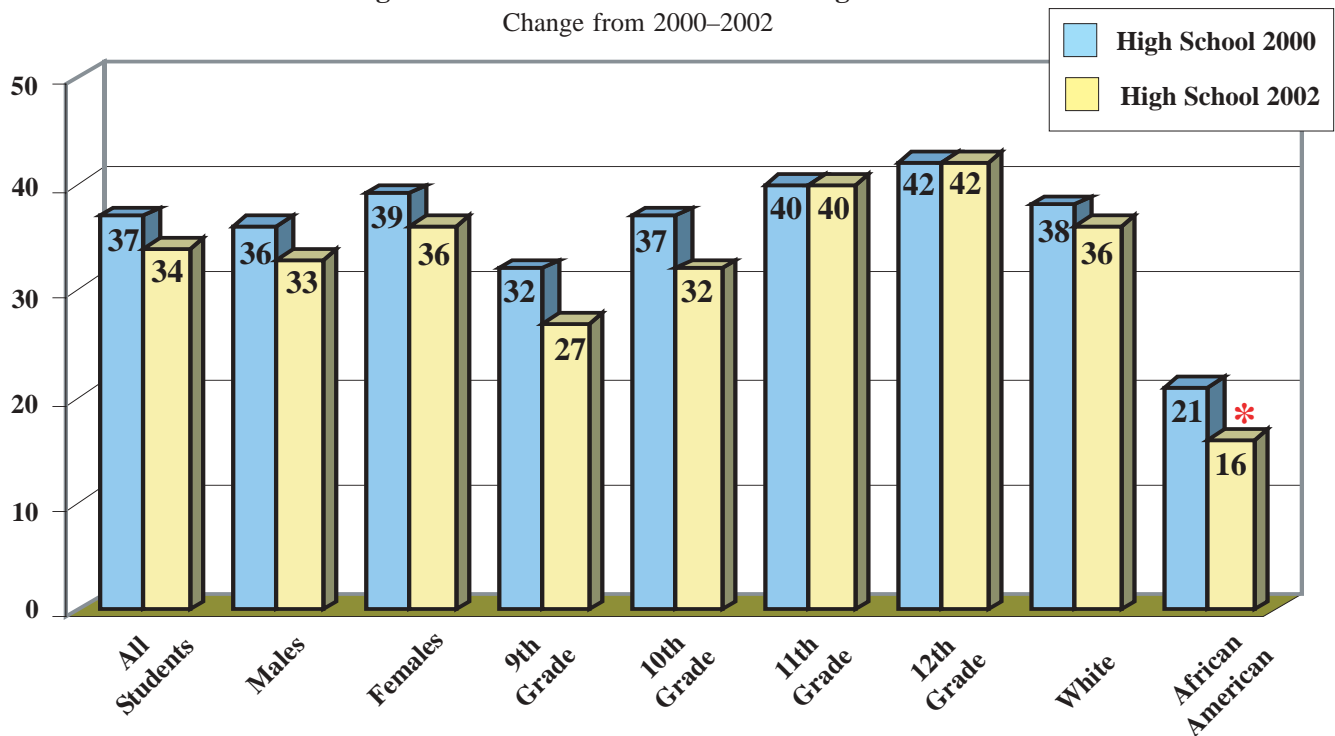
Chart 4 shows current use of specific tobacco products for middle school students. Middle school students show a pattern similar to high school students. In 2000, 22% of middle school students reported the current use of cigarettes compared to 15% in 2002. While this may suggest a decline in cigarette use, the change is not statistically significant. Current use of cigars, spit/smokeless tobacco, bidis and kreteks is statistically unchanged.

**Chart 4**  
**Middle School Students**  
**Current Use of Specific**  
**Tobacco Products**  
Change from 2000–2002



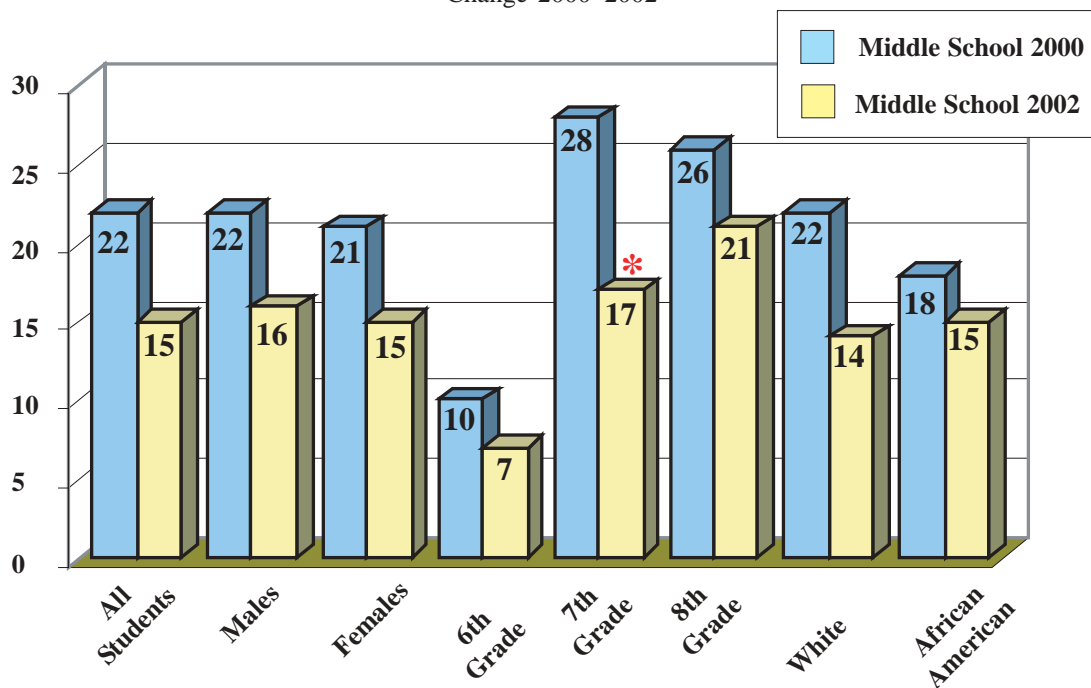
Charts 5 and 6 provide a closer look at patterns of current cigarette use among high school and middle school students. These charts break down results by gender, grade and race. For high school students, there are no statistically significant changes in current cigarette use from 2000 to 2002 among these groups. African American high school students do show statistically lower rates of current cigarette use compared to white students in both 2000 and 2002, a finding in line with national data.

**Chart 5**  
**High School Students Current Use of Cigarettes**  
Change from 2000–2002



The results for middle school students suggest a decline in current cigarette use. While not statistically significant, the change from 22% of middle school students who reported being current smokers in 2000 to 15% in 2002 is certainly promising. Examining the data by grade level **we do see a statistically significant drop in current smoking for seventh graders – from 28% in 2000 to 17% in 2002.** The data also show a statistically significant decline in current smoking for white middle school students. Twenty-two percent of white students were current smokers in 2000 compared to 14% in 2002.

**Chart 6**  
**Middle School Students Current Use of Cigarettes**  
Change 2000–2002



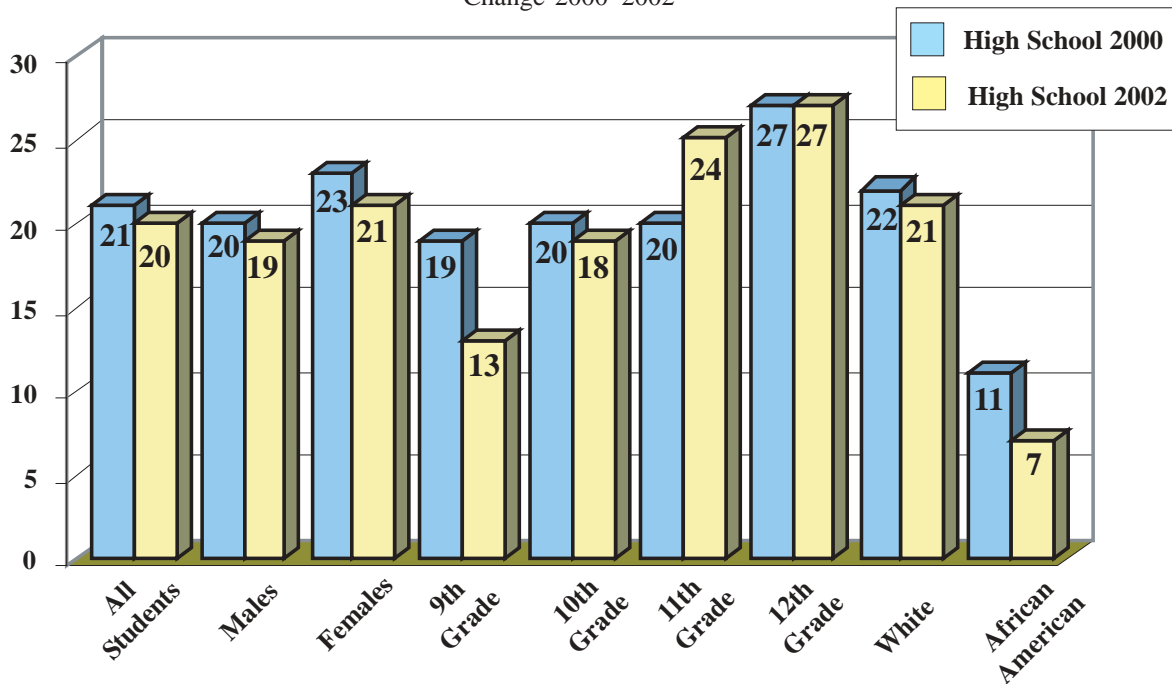
One final pattern to recognize when reviewing the last two charts is that while there is evidence of a decline in current smoking among middle school students, smoking rates steadily increase from sixth grade through twelfth grade. The greatest increase is seen between sixth and seventh grades with more than one in five students smoking by the time they reach eighth grade. From ninth grade to 12<sup>th</sup> grade, current smoking rates rise from 27% to 42%.

The pattern of increased smoking in each grade has important implications for successful youth smoking prevention efforts. Middle school years are considered an important target for providing research based tobacco prevention curricula. This data strongly suggests that efforts to target youth in grades six through eight are beginning to show an impact as seen in statistically lower rates of smoking among seventh grade students and for white middle school students overall. The data also reinforces the need to continue efforts in middle schools to ensure Kentucky's continued progress toward the goal of reducing the number of youth who smoke.

## Frequent Use

CDC defines frequent use of cigarettes as smoking cigarettes on 20 or more of the 30 days prior to the survey. While “current cigarette smoking” reflects the number of youth who begin to use tobacco in a way that could lead to addiction, frequent smoking reflects the number of youth who are established smokers – youth who are at high risk for tobacco addiction and subsequent tobacco related health problems.

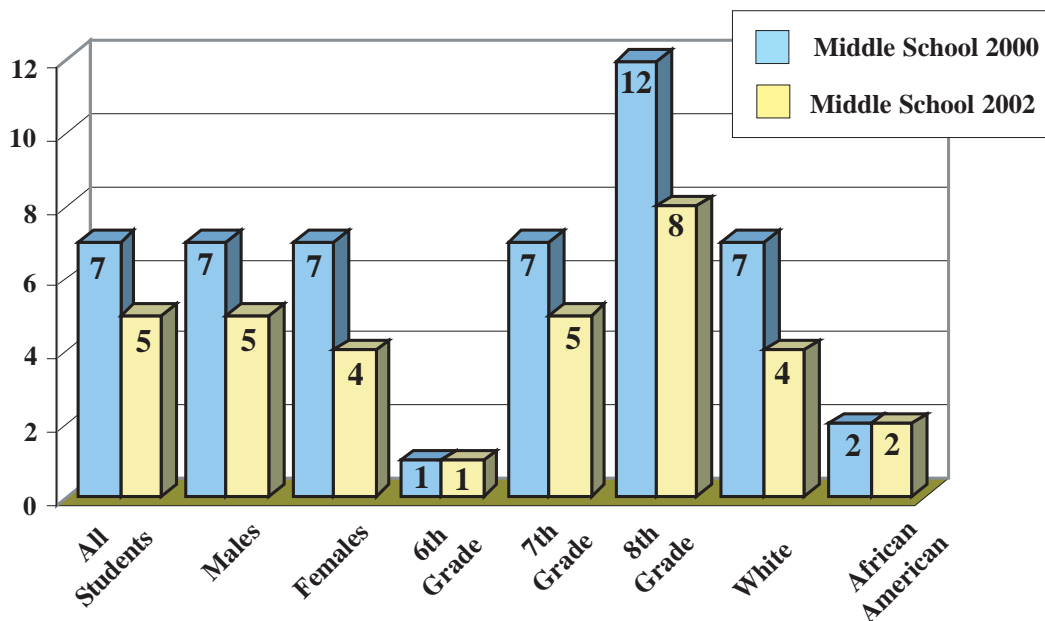
**Chart 7**  
**High School Students Frequent Use of Cigarettes**  
Change 2000–2002



Charts 7 and 8 show the percent of high school and middle school students who are frequent smokers. Overall, 20% of high school students and five percent of middle school students report frequent cigarette use at levels essentially unchanged from the 2000 KYTS. There is some good news to be found with a closer examination of the survey results. While frequent smoking rates are unchanged for most grades, the data suggests that frequent smoking among eighth and ninth graders may be beginning to decline.

As was seen in the 2000 Kentucky Youth Tobacco Survey, frequent cigarette smoking is well established by the ninth grade, and approximately one in four eleventh and twelfth graders are frequent smokers. The rates of frequent smoking shown here reinforces the need to provide research based tobacco prevention and cessation activities in both middle and high schools.

**Chart 8**  
**Middle School Students Frequent Use of Cigarettes**  
Change from 2000–2002

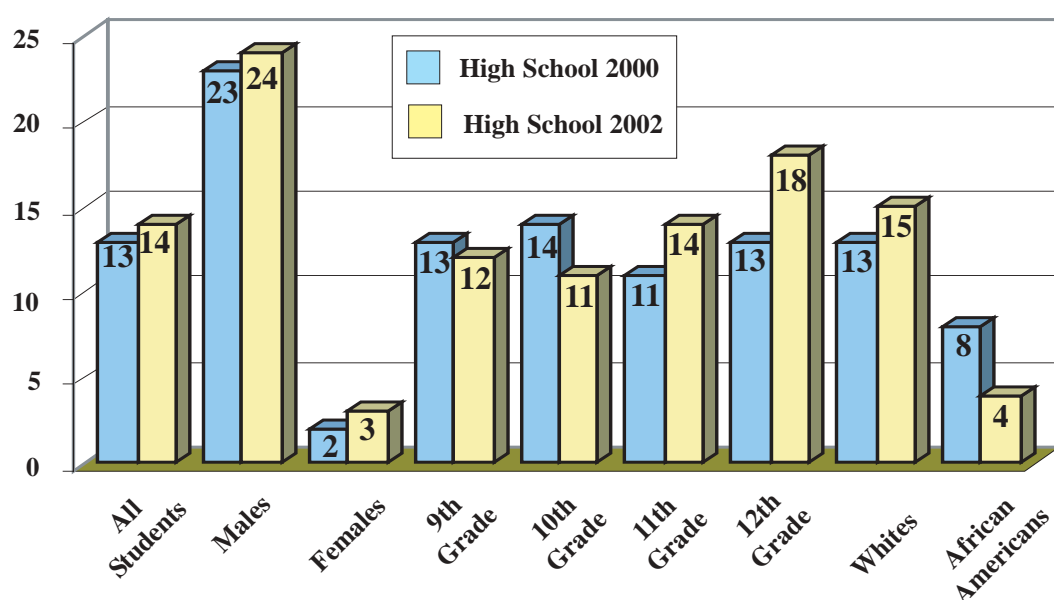




# Smokeless Tobacco Use

The CDC defines current use of smokeless tobacco (SLT) as having used one of these products on one or more of the 30 days prior to the survey. Smokeless tobacco is tobacco that is not smoked or burned. It includes snuff, spit or chewing tobacco. Charts 9 and 10 show the percentage of high school and middle school students who use spit tobacco. Between 2000 and 2002 there has been no statistically significant change in the number of Kentucky youth who use spit or smokeless tobacco products. While not statistically significant, there appears to be a distinct upward trend among eleventh and twelfth graders where current SLT use has increased five percentage points since 2000. Overall, 14% of high school students and 11% of middle school students are current users of spit or smokeless tobacco.

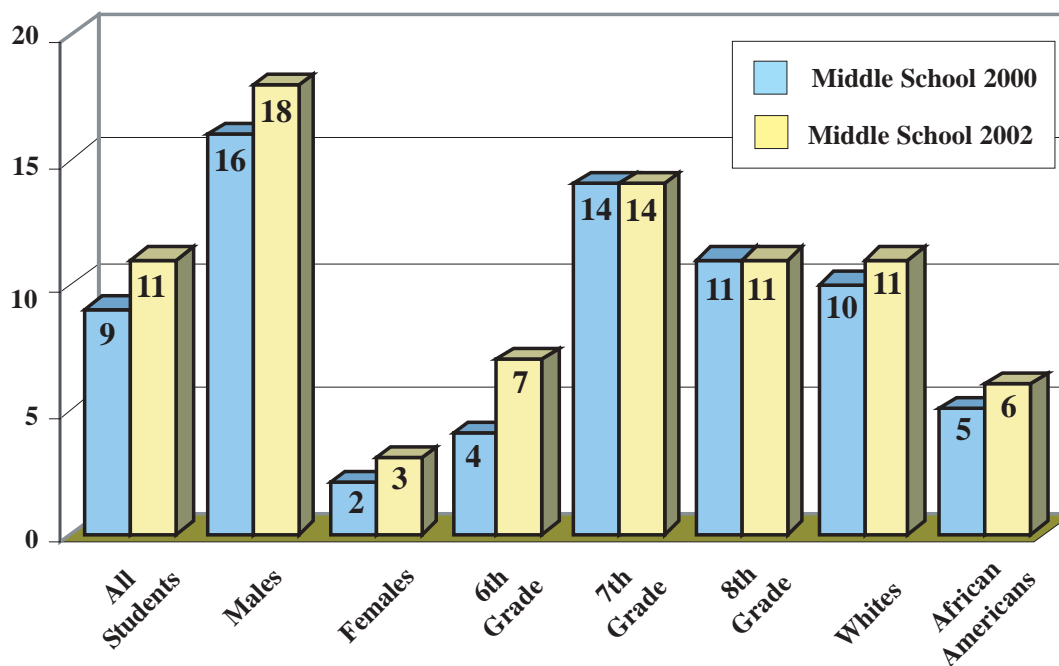
**Chart 9**  
**High School Students Current Use of Smokeless Tobacco**  
Change from 2000–2002



Spit or smokeless tobacco products are used primarily by males. Use of SLT products is associated with serious health problems, particularly oral cancers. Twenty-four percent of high school males use spit/smokeless tobacco as do 18% of male middle school students.

The lack of progress in discouraging youth use of SLT products suggests a need for more aggressive implementation of SLT education programs. Among Kentucky youth, SLT use is well established by seventh grade. CDC identifies multi-year SLT prevention units in school health education curricula and coordination of school efforts with community based prevention activities as a “Best Practice” for preventing SLT use.

**Chart 10**  
**Middle School Current Use of Spit Tobacco**  
Change from 2000–2002

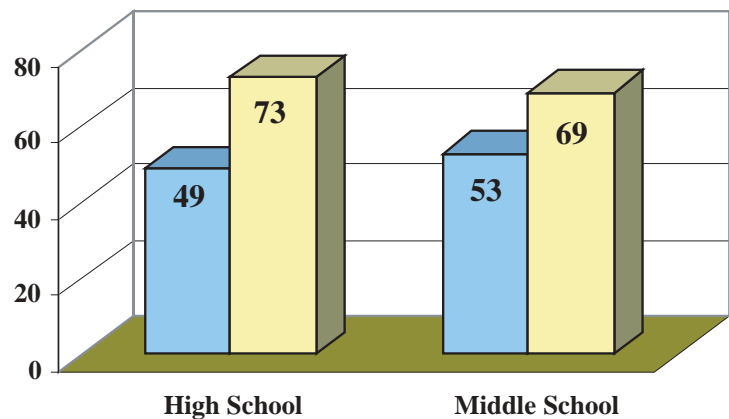
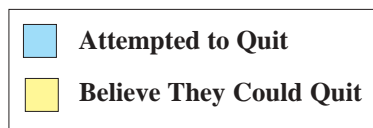


# Tobacco Cessation

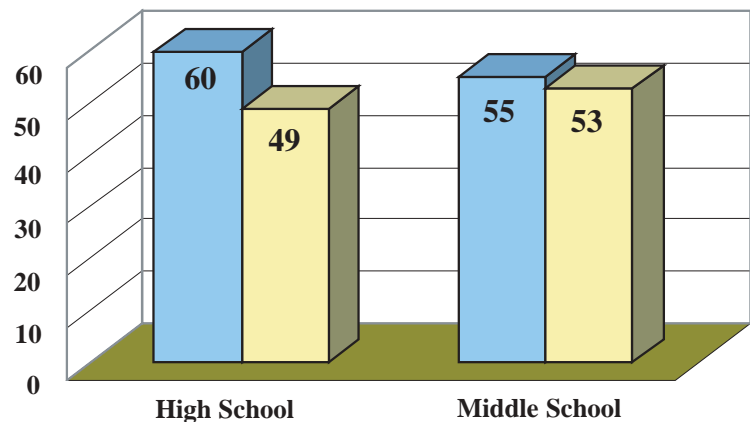
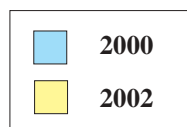
Chart 11 shows the percent of high school and middle school current smokers who have attempted to quit smoking in the 12 months prior to the 2002 survey and the percentage of current smokers who believe they could quit smoking. Despite the fact that almost 3/4ths of current smokers believe that they could quit if they wanted to, the data shows that 49% of high school smokers and 53% of middle school smokers have attempted to quit and been unsuccessful. Chart 12 shows the percentage of current smokers who reported quit attempts in 2000 and 2002. Significantly FEWER high school students attempted to quit smoking in 2002 (49% of current smokers) while in 2000 60% of current smokers had attempted to quit. Quit attempts among middle school students is statistically unchanged between 2000 and 2002.

The number of students who have attempted to quit smoking demonstrates a need for cessation programs tailored to the needs of this group. CDC recommends that schools provide tobacco cessation services to students and staff rather than punishing students for violating school tobacco policies.

**Chart 11**  
**Smoking Cessation**  
**(2002 Current Smokers Only)**



**Chart 12**  
**Quit Attempts**



## Access to Tobacco Products

Kentucky law, KRS 438.310, forbids retail sale of tobacco products to minors, while KRS 438.311 restricts anyone under age 18 from purchase, possession or use of tobacco products. Compliance with the laws regulating the sale of tobacco products to minors is monitored by the Department of Alcoholic Beverage Control (KABC). For FY 2001, ABC reported that during compliance checks 87 % of tobacco retailers complied with state age of sale laws.

Although this compliance rate is very high and well above the minimum standard set by federal law, many Kentucky youth are still able to purchase tobacco products from those 13% of retailers who do not comply with the age-of-sale law. Chart 13 shows the points of access to tobacco products reported by Kentucky youth. The largest proportion of youth get their cigarettes by giving money to an older person who then purchased the cigarettes, or students bummed/borrowed the cigarettes from someone else. An additional 10% of high school students and 13% of middle school students were given cigarettes by an older person. However, 20% of high school students and 7% of middle school students purchased cigarettes in stores themselves.

**Chart 13**  
**Point of Access to Cigarettes**  
**Where Youth Usually Get Their Cigarettes**  
(2002 Current Smokers Only)

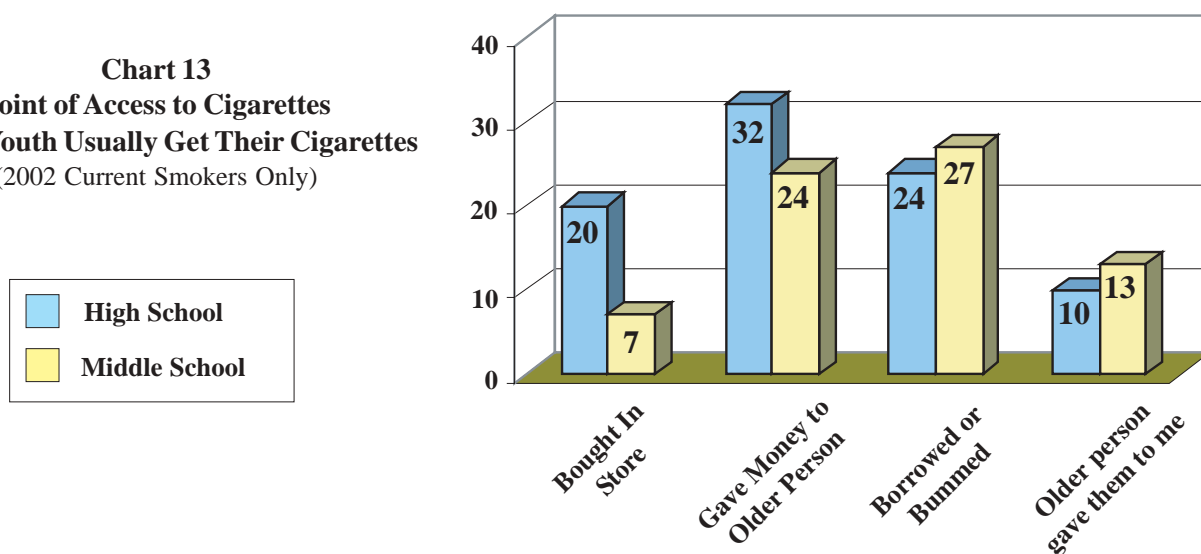
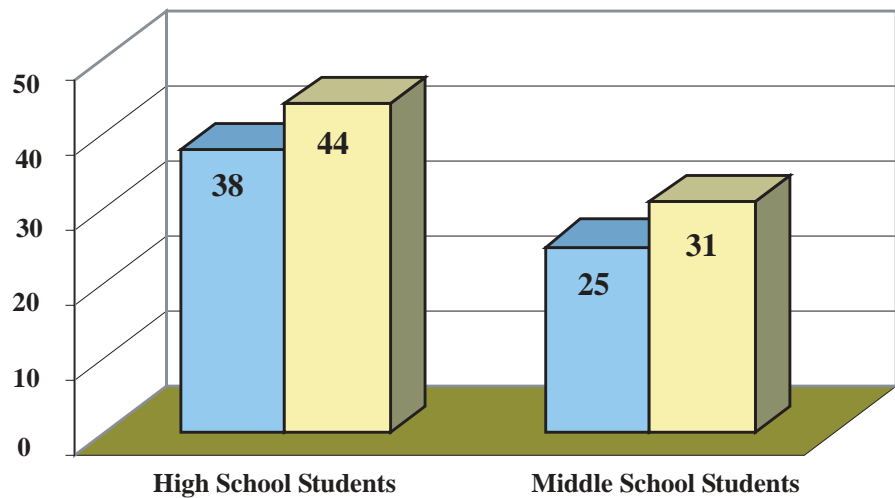
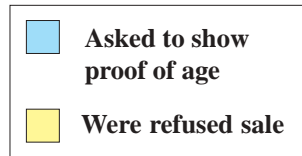


Chart 14 shows the percentages of high school and middle school students who were asked to show age identification when attempting to purchase cigarettes in a store in the 30 days prior to the survey and the percentage of students who were refused sale of cigarettes due to their age. Only 38% of high school students and 25% of middle school students who attempted to purchase cigarettes at stores were asked to show proof of age. Forty-four percent of high school students and 31% of middle school students were denied purchase of cigarettes due to their age.

This demonstrates that students are able to find retailers who will sell to underage persons despite Kentucky law and very high compliance rates. Continued surveillance of sales to underage persons and education of retailers regarding the penalties for noncompliance remain important tools for limiting youth access to tobacco products.

**Chart 14**  
A comparison of ID requests  
and refusal to sell  
(2002 KYTS Only)



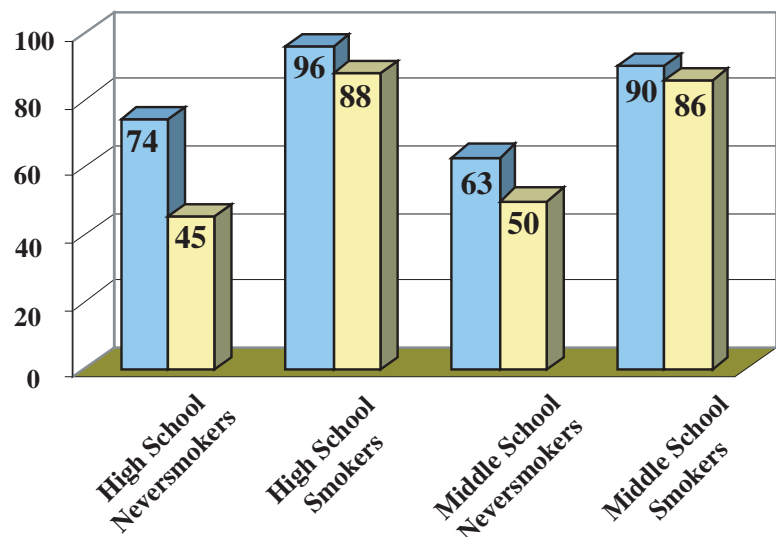
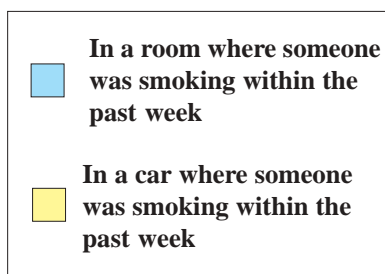
## Exposure to Secondhand Smoke (SHS)

Exposure to secondhand smoke (also called environmental tobacco smoke) occurs when nonsmokers are in the same area where others are smoking. Children and teens are very vulnerable to harm from secondhand smoke which is associated with asthma, bronchitis, pneumonia and middle ear infections. More than 4,000 chemical compounds have been identified in tobacco smoke. The Centers for Disease Control and Prevention (CDC) reports that at least 43 of these compounds are known to cause cancer in humans and animals. Evidence strongly suggests that secondhand smoke causes heart disease and lung cancer among nonsmokers.

Kentucky youth report very high rates of exposure to second hand smoke. In the week before the survey, 45% of nonsmoking high school students were exposed to SHS while riding in a car and 74% were exposed while in a room with a smoker. For middle school students, 50% of nonsmoking middle school students were exposed to SHS while riding in a car and 63% percent were exposed to SHS while in a room with a smoker.

As can be seen in chart 15, the rate of SHS exposure is much higher among smokers. Eighty-eight percent of high school smokers were further exposed to carcinogens from SHS exposure in cars, while 96% were further exposed to carcinogens while in a room with a smoker. The rates are nearly as high for middle school students, with 86% of middle-school smokers being exposed to SHS while in a car and 90% being exposed while in a room with a smoker.

**Chart 15**  
Exposure to Secondhand Smoke  
(2002 KYTS Only)

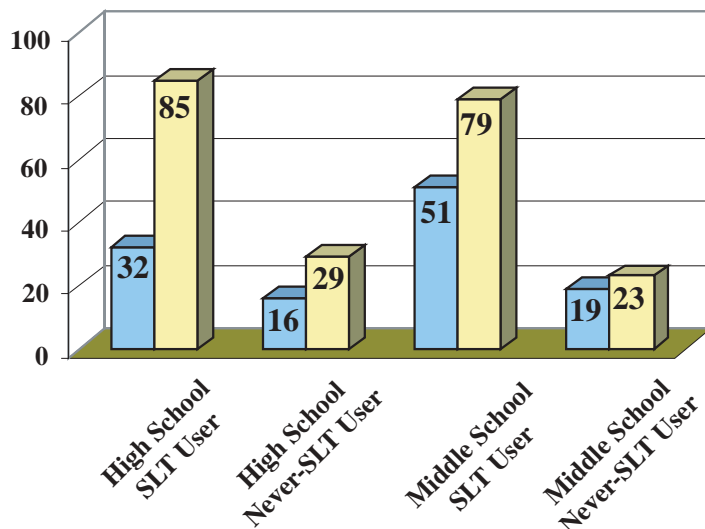
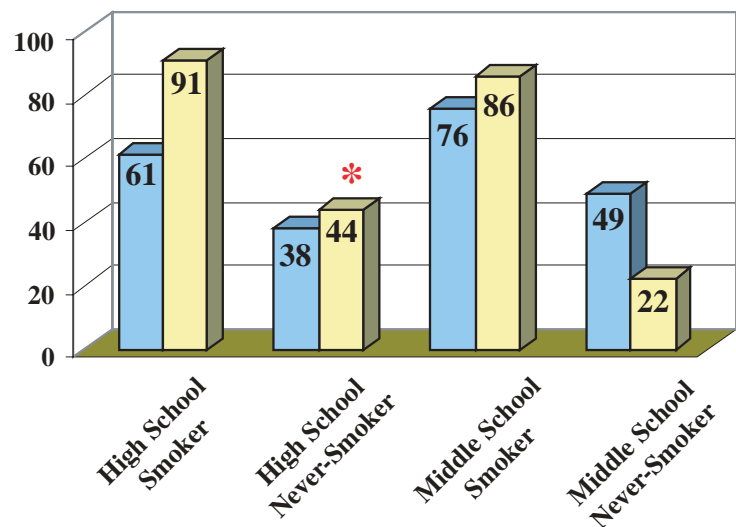
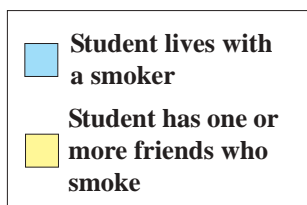


## Social Influences Impacting Tobacco Use

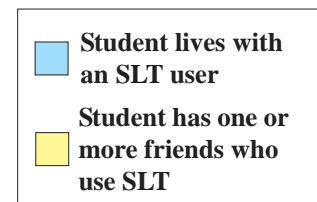
Young people are strongly influenced by the examples they see in their social environment about tobacco use from their peers, family, and other adult role models such as teachers and coaches. Having strong tobacco-free policies in public places are considered an important component of a youth prevention program.

In examining two important social role models, family and friends, we see that Kentucky youth who live with someone who smokes or uses spit tobacco are much more likely to smoke or use SLT themselves. Charts 16 and 17 show the relationship between living in a household with a tobacco user and youth tobacco use. Sixty-one percent of high school student smokers also live with a smoker, and 32% of SLT users live with someone who uses spit tobacco. Among middle school students the impact of having a smoker or SLT user in the family is even higher. Seventy-six percent of middle school smokers report that they live with someone who smokes while 51% of middle school SLT users report living with someone who uses spit tobacco.

**Chart 16**  
Social Influences in Smoking  
(2002 Only)



**Chart 17**  
Social Influences in SLT Use  
(2002 Only)



Ninety-one percent of high school smokers have at least one friend who smokes, while 44% of nonsmokers have one or more friends who smoke. Similarly, 86% of middle school smokers have one or more friends who smoke while 22% of nonsmokers have one or more friends who smoke. The trend continues among SLT users, where 85% of high school students who use SLT have one or more friends who also use SLT while 29% of non-SLT users have friends who use SLT. Seventy-nine percent of middle school SLT users have one or more friends who use SLT compared to 23% of non-SLT users.

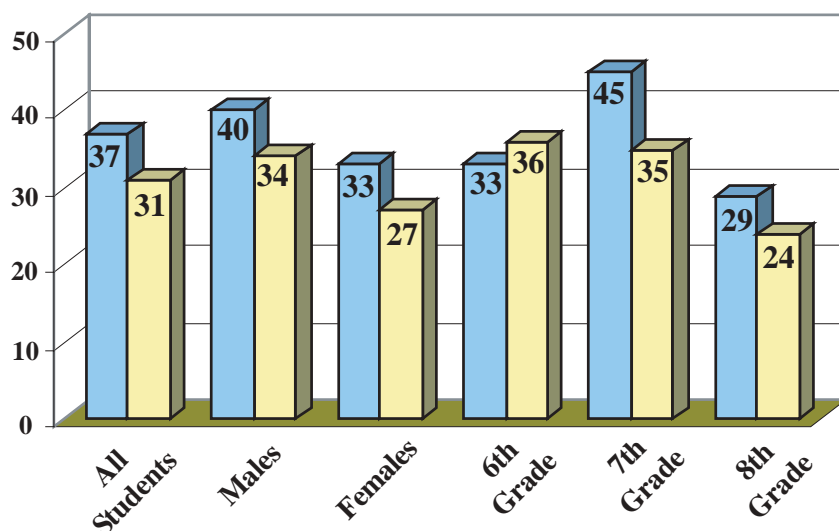
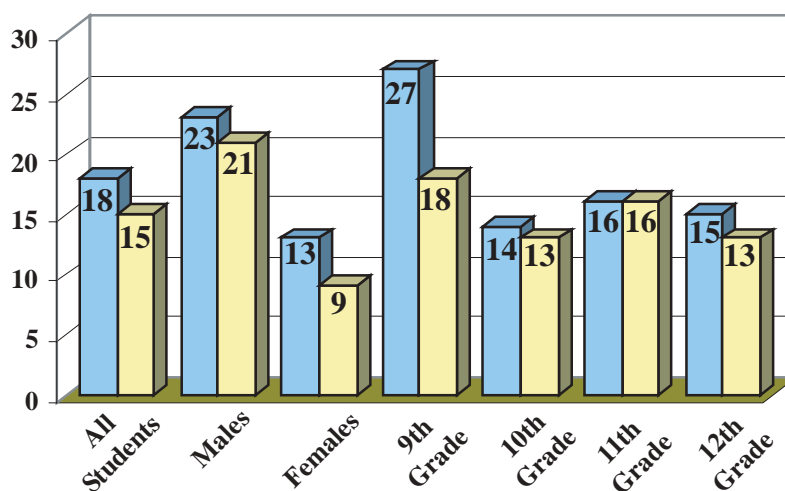
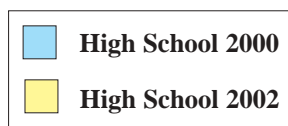
# Tobacco Dependence

## Age of Initiation

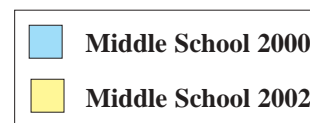
Use of tobacco products among Kentucky youth begins early in life and for many quickly increases to a level that results in chemical dependence on nicotine. Charts 18 and 19 show the age at which Kentucky youth smoke their first cigarette. Fifteen percent of all high school students smoked their first whole cigarette before age 11. Statistically, males are more likely to have smoked their first cigarette before 11 years of age. There is no statistical difference in the age of initiation by high school grade level.

Not surprisingly, compared to high school students, a larger percentage of middle school students report having smoked their first whole cigarette before age 11. Eighth-graders are statistically less likely to have smoked before age 11 than either seventh or sixth graders.

**Chart 18**  
**High School Lifetime Smokers:**  
**Smoked first cigarette before age 11**



**Chart 19**  
**Middle School Lifetime Smokers:**  
**Smoked first cigarette before age 11**





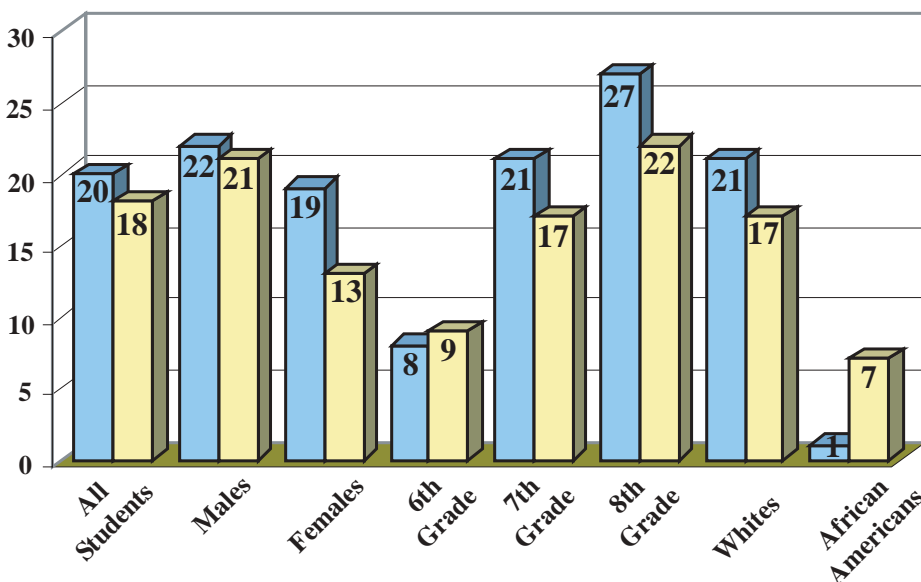
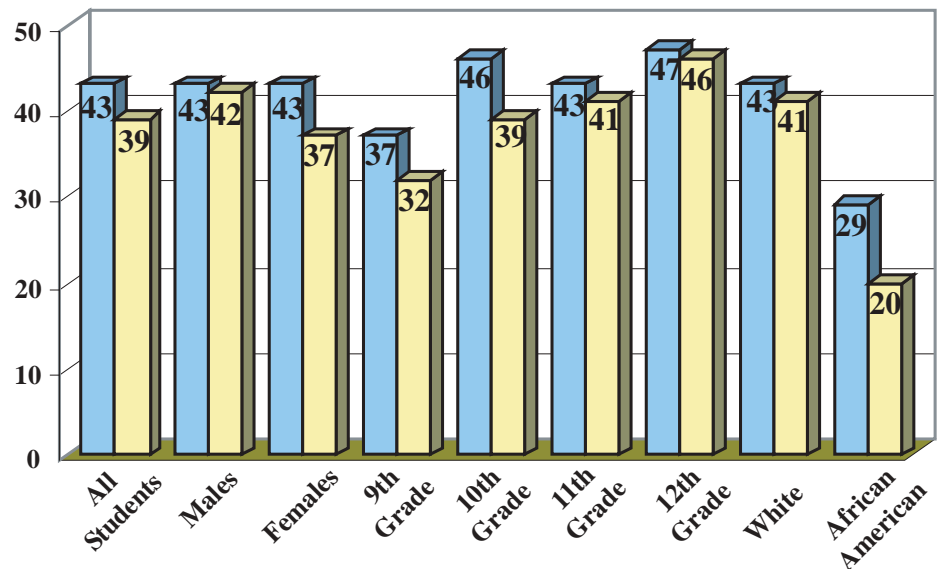
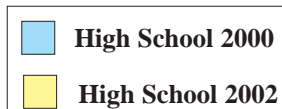
## Established Smoking

One important measure of established tobacco use is the total number of cigarettes smoked over one's lifetime. Having smoked 100 or more cigarettes is considered a strong indicator that an individual is becoming an established tobacco smoker. Young people often underestimate the addictive nature of tobacco and the risk of tobacco related disease. Because of this, children and teens may become addicted to tobacco before they are able to fully understand the consequences of their decision to begin smoking.

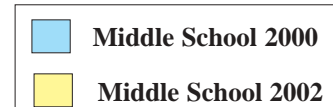
Charts 20 and 21 show the percentage of high school and middle school students who have smoked 100 or more cigarettes. Thirty-nine percent of Kentucky high school students who have ever smoked a cigarette have gone on to smoke 100 or more cigarettes. This figure is essentially unchanged from the levels seen in the 2000 Youth Tobacco Survey when 43% of high school students could be considered established smokers. There is a modest downward trend among females, tenth graders and African American students, indicating that some portions of the student population are making healthier choices.

Eighteen percent of current middle school smokers have smoked 100 or more cigarettes. Eighth graders are statistically more likely to have smoked 100 or more cigarettes than are their lower grade counterparts. What may appear to be an alarming jump in dependence among African American students is not statistically significant. African American students continue to smoke at lower rates than do white students.

**Chart 20**  
**High School**  
**Lifetime Smokers:**  
**Smokers who have smoked**  
**100 or more cigarettes**



**Chart 21**  
**Middle School**  
**Lifetime Smokers:**  
**Students who have smoked**  
**100 or more cigarettes**



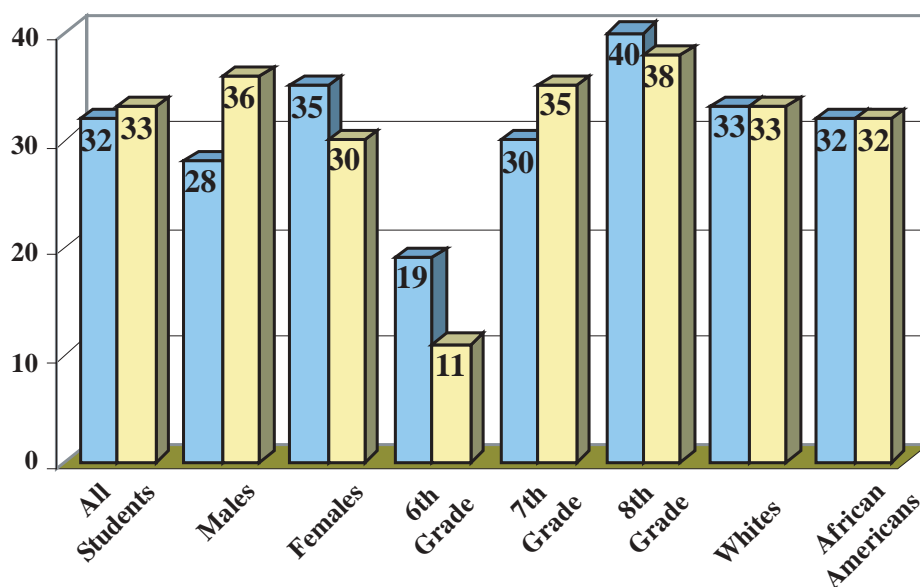
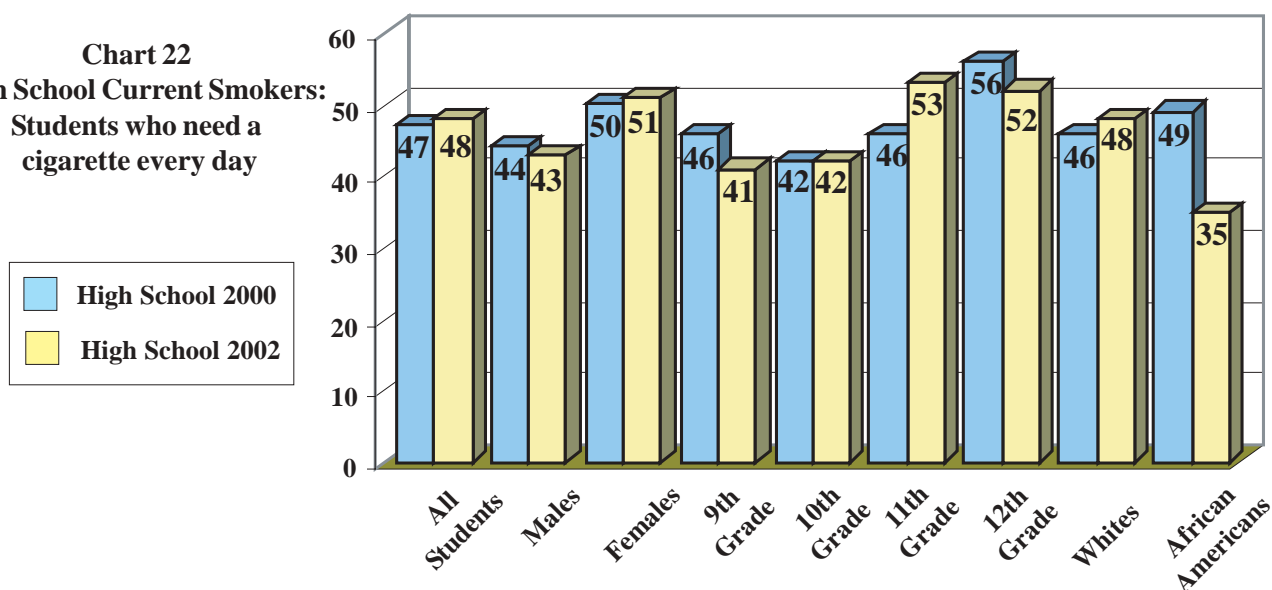
## Daily Dependence

One additional measure of tobacco dependence is the length of time a smoker can go without feeling they need to smoke. Smokers who feel the need to smoke a cigarette every day are established smokers and likely to be chemically dependent on nicotine.

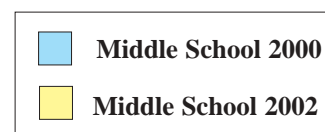
Charts 22 and 23 show the percentage of current smokers who report that they need a cigarette every day. Among high school students, nearly half of current smokers say they need a cigarette every day. There are no statistically significant differences by gender, grade or race in the percentage of high school students who report that they need a cigarette every day. This clearly shows that these youth are not 'casual' smokers, they are established smokers who have developed a dependence on nicotine.

About one-third of middle school smokers need a cigarette every day, with only 11% of sixth graders reporting that level of addiction while the number jumps to 35% for seventh graders and 38% of eighth graders. This trend makes sense due to the addictive nature of tobacco products. We have seen that Kentucky youth begin smoking at an early age and are likely to have smoked 100 or more cigarettes. Therefore, seeing an increase in self-reported addiction by age/grade level is consistent with continued use of an addictive product.

**Chart 22**  
**High School Current Smokers:**  
**Students who need a**  
**cigarette every day**



**Chart 23**  
**Middle School**  
**Current Smokers:**  
**Students who need a**  
**cigarette every day**



# Technical Notes

## Instrument

Middle and high school students were surveyed using the *Youth Tobacco Survey* (YTS) instrument developed by the Centers for Disease Control. The results of the Kentucky portion of this national survey (henceforth denoted KYTS) are described in this report.

## Sample

The KYTS sample is representative of all middle and high school students in Kentucky. The survey was administered to middle and high school students throughout the state.

A two-stage cluster sample design was used to select the potential participants. The first stage consisted of randomly choosing 50 middle schools from among the 214 middle schools in the state and 49 high schools from among 248 available with probability proportional to size (PPS). Of these, 37 middle schools and 40 high schools agreed to participate. The school participation rates were 74.0 percent (37/50) for middle schools and 81.6 percent (40/49) for high schools.

The second stage of the sampling involved randomly choosing classes within the sampled schools. All students from each randomly selected classroom were asked to participate. In all, an average of 42 students from each middle school and 40 students from each high school were invited to complete the survey. A total of 1,282 middle school students (grades 6-8) in 37 schools completed the survey, as did 1,313 high school students (grades 9-12) in 40 schools. The participation rate for middle school students was 83.3 percent (1282/1539); the participation rate for high school students was 82.1 percent (1313/1600). The responses were weighted by the Centers for Disease Control after the survey was administered. Weighing of the data was used to adjust for nonresponse at both the grade and school level in order to make the results representative of all middle and high school students in Kentucky.

The survey was administered during one class period. Procedures were designed to protect students' privacy by assuring that student participation was anonymous and voluntary. Students completed a self-administered questionnaire in the classroom, recording their responses on an answer sheet. The core questionnaire contained 75 questions. Before the survey was administered, local parental permission was obtained and institutional review board criteria were followed. The core questionnaire included questions about tobacco use, exposure to secondhand smoke, smoking cessation, school curriculum, minors' ability to purchase or obtain tobacco products, knowledge and attitudes about tobacco, and familiarity with protobacco and antitobacco media messages.

## Summary Methods Used

The report uses a combination of descriptive and graphical methods to present survey data. The graphs included all indicate the percentage in each response category as well as the confidence interval for the observed percentage. The confidence interval is a function of the sample size responding to the item as well as the how close the estimated response percentage is to 50 percent.

For items with fewer students responding (e.g., smoking patterns among middle school Hispanics), the confidence interval will typically be wider to account for a lower degree of certainty due to the limited sample size. Conversely, items with a larger group of respondents will tend to have narrower confidence intervals.

In general, as the estimated percentage is closer to 50 percent, the confidence interval is wider. As the estimated percentage moves closer to 0 percent or 100 percent the confidence interval gets narrower. This phenomenon occurs because the variability in responses is a function of the observed percentage, and when the observed percentage is equal to 50 percent the variability is at its maximum, given a fixed sample size.

The interpretation of the 95 percent confidence interval is that if this survey were to be carried out 100 times, the confidence intervals obtained in each case would contain the *true* population percentage (of high school smokers, for example) 95 percent of the time. So while it isn't certain that the true population proportion is contained within a *particular* confidence interval, we can say we are 95 percent confident in the method of obtaining the particular confidence interval.

It should be noted that while the percentages displayed in the tables and graphs reflect the *weighted* responses, the error estimates for the confidence intervals are based on the *actual* number of students participating. This is in keeping with the CDC guidelines for the reporting of percentages and generation of confidence intervals.

**Table 1. Current tobacco use among Kentucky middle school students by gender, race/ethnicity, and grade.**

Category	Any Tobacco Use		Cigarette Use		Cigar Use		Bidis Use		Smokeless Tobacco Use	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Gender										
Male	28	5	16	4	10	2	3	2	18	4
Female	19	4	15	4	5	2	6	3	3	1
Race/Ethnicity										
White	22	4	14	3	7	2	4	1	11	2
African American	23	8	15	7	10	7	5	4	6	5
Hispanic	35	19	25	15	11	13	16	16	14	15
Other	42	14	31	13	21	9	16	11	18	8
Grade										
Sixth	16	7	7	4	5	3	4	3	7	3
Seventh	25	5	17	5	8	3	5	3	14	5
Eighth	29	5	21	3	11	3	4	2	11	3
<b>Total</b>	<b>24</b>	<b>4</b>	<b>15</b>	<b>3</b>	<b>8</b>	<b>2</b>	<b>5</b>	<b>2</b>	<b>11</b>	<b>3</b>

\* Current tobacco use is defined as use of tobacco on one or more of the 30 days preceding the survey.

+ Includes cigarettes, cigars, bidis, or smokeless tobacco.

**Table 2. Current tobacco use among Kentucky high school students by gender, race/ethnicity, and grade.**

Category	Any Tobacco Use		Cigarette Use		Cigar Use		Bidis Use		Smokeless Tobacco Use	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Gender										
Male	48	4	33	4	23	4	6	2	24	5
Female	40	4	36	4	11	3	3	2	3	2
Race/Ethnicity										
White	46	3	36	4	17	2	5	1	15	2
African American	32	10	16	5	23	11	6	5	4	5
Hispanic	45	10	43	11	24	15	3	6	10	11
Other	25	16	11	10	14	13	10	9	7	10
Grade										
Ninth	36	4	27	4	12	4	4	2	12	3
Tenth	40	7	32	5	14	5	4	3	11	4
Eleventh	51	7	40	7	21	5	4	3	14	5
Twelfth	55	5	42	8	24	4	7	3	18	6
<b>Total</b>	<b>24</b>	<b>4</b>	<b>15</b>	<b>3</b>	<b>8</b>	<b>2</b>	<b>5</b>	<b>2</b>	<b>11</b>	<b>3</b>

\* Current tobacco use is defined as use of tobacco on one or more of the 30 days preceding the survey.

+ Includes cigarettes, cigars, bidis, or smokeless tobacco.

**Table 3. Sample Characteristics by Gender and Ethnicity**

Category	Middle School		High School	
	Actual Number	Weighted Percentage	Actual Number	Weighted Percentage
Gender				
Male	766	51	737	49
Female	763	49	785	51
Race/Ethnicity				
White	1,313	88	1,327	89
African American	84	5	118	7
Hispanic	24	2	21	1
Other*	81	5	41	3

\*Other categories include American Indian or Alaska Native, Asian, Native Hawaiian or Other Pacific Islander.

**NOTE:** The total for middle and high school students by gender and race are slightly less than the total number of participants for each school level due to missing data.

## Healthy Kentuckians 2010 Tobacco Use Objectives

This report contributes essential knowledge that must be incorporated into efforts to accomplish the Healthy Kentuckians 2010 Prevention Initiative.<sup>1</sup> Healthy Kentuckians 2010 is our state's commitment to the national prevention initiative, Healthy People 2010. The Healthy Kentuckians 2010 Prevention Objectives fall into four major categories: (1) promoting healthy behaviors; (2) promoting healthy and safe communities; (3) improving systems for personal and public health; and (4) preventing and reducing disease and disorders.<sup>1</sup> The Recommended Actions in this report are consistent with the following Healthy Kentuckians 2010 Tobacco Use Objectives:

<b>Objective 3.6</b>	Reduce to 28 percent the proportion of young people who have smoked cigarettes with the past 30 days (1997 Baseline: 47.0 percent males 48.4 percent and females 45.3 percent).
<b>Objective 3.6a</b>	Reduce by 40 percent the proportion of young people who have used smokeless tobacco in the past 30 days (1997 Baseline: males 28.6 percent, and females 2.3 percent).
<b>Objective 3.8</b>	Increase to 32 percent the proportion of young people in grades 9 to 12 who have never smoked (1997 Baseline: 22.7 percent).
<b>Objective 3.9</b>	Increase to 56 percent the proportion of youth smokers who quit for at least one day or more (1997 Baseline: 39.7 percent).
<b>Objective 3.10</b>	Increase the proportion of eighth, tenth, and twelfth graders who disapprove of tobacco use.
<b>Objective 3.11</b>	Increase the proportion of eighth-twelfth graders who associate harm with tobacco use.
<b>Objective 3.12</b>	Increase the proportion of schools (middle and high) that provide research-based tobacco use prevention curricula (1998 Baseline: 9 percent).
<b>Objective 3.13</b>	Enforce minors' access laws to increase compliance to 95 percent or higher (1998 Baseline: 86 percent).
<b>Objective 3.15</b>	Increase to 100 percent the proportion of schools with tobacco-free environments including all school property, vehicles, and at all school events.
<b>Objective 3.16</b>	Increase to 100 percent the proportion of work sites that prohibit smoking or limit it to separately ventilated areas.
<b>Objective 3.18</b>	Increase to 95 percent the proportion of patients who receive advice to quit smoking from a health care provider.
<b>Objective 3.19</b>	Increase the proportion of health plans that reimburse for nicotine addiction treatment.
<b>Objective 3.22</b>	Increase the proportion of localities that adopt ordinances and/or policies to restrict tobacco use.